Sustainable FERC Project
Policies for a Clean Electric Grid

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UNDERSTANDING ENERGY:

PJM Explained

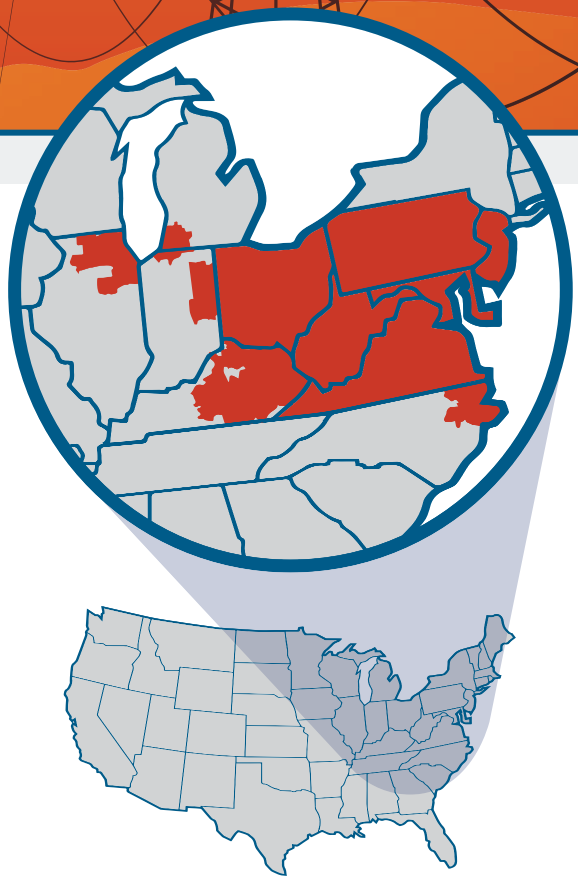
What is PJM?

PJM Interconnection is a little-known company that operates the electric grid for a region stretching from New Jersey to North Carolina, and from Illinois to our nation's capital. From its headquarters in suburban Philadelphia, PJM coordinates the flow of electricity from generators to local utilities across a web of high-voltage transmission lines. Local utilities distribute this power directly to consumers.

In addition to managing the transmission system, PJM runs wholesale markets in which it buys electricity on behalf of utilities. These markets determine the mix of energy sources that power our homes and businesses—as well as a large portion of what we pay on our monthly bills.

Why was PJM first created?

From the 1920s to the 1990s, utilities across the country held monopoly control over both the generation and the delivery of electricity. PJM emerged during this period of "vertically integrated utilities" as a department of PECO (formally Philadelphia Electric) in southeastern Pennsylvania.



PJM's service territory

includes all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia and Washington, D.C.

In its original form, PJM provided shared services to a group of utilities in the Mid-Atlantic, helping them maintain transmission lines and repair plant outages.

Starting in the late 1980s, states saw a steep rise in electricity prices as integrated utilities passed the costs of their boom-bust cycle of power plant construction to consumers. Advocates fought back against this trend, prompting some state governments to restructure their power sectors by breaking up utilities and generators into separate companies. Around the same time, new federal laws were passed that drove the creation of wholesale markets in which generators could compete to supply their electricity and thereby (at least in theory) reduce prices for consumers. PJM then became one of several "regional transmission organizations" to run these markets under the watchful eye of federal energy regulators.

One by one, utilities opted into PJM's territory to take advantage of competitive energy markets. The East Kentucky Power Cooperative joined as recently as 2013.

What happens in PJM's markets?

Two of the most important markets run by PJM include the daily energy market that buys the power needed to meet minute-by-minute demand, **and the capacity market**. In its energy market, PJM buys electricity from wind, gas, coal and other generators to satisfy local demand, drawing first on those sources with the lowest operating costs. In parts of the PJM region where there are constraints on transmission lines, PJM may dispatch a closer, but more expensive source.

In its capacity market, PJM looks three years ahead and estimates how much power it will need to supply electricity uninterrupted. PJM then pays generators in advance for their ability to provide this power when it's needed. Some generators rely heavily on capacity market revenues to stay in business—for example, in 2018, nearly 90% of coal plants were unable to cover their costs in PJM's energy market alone.

Why pay attention to PJM?

The rules that govern PJM's markets shape the mix of sources that make up our energy supply. Because PJM is instrumental in steering the design and implementation of those rules, it has tremendous power to influence energy policy in its region—a dynamic that can sometimes place PJM squarely at odds with the energy goals of individual states.

Ultimately, it is the end customer who pays for decisions made at PJM—for example, almost a quarter of the charges on monthly electricity bills derive from PJM's capacity market. PJM also determines which state's customers pay for updates to transmission lines that cross state boundaries.

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Who makes decisions at PJM?

As a limited liability company (LLC), PJM is governed by a Board of Managers and a committee of voting members numbering into the thousands. Most of PJM's members consist of energy businesses, utilities, electricity customers and others who have an interest in the company's operations. In theory, anyone not employed by PJM can become a member; in practice, it is only accessible to those who can pay the $5,000 annual membership fee, attend numerous monthly meetings, and assume potential legal liability.

PJM's Five Industry Sectors

PJM's members are arranged into five voting blocs or "industry sectors." Each sector is entitled to an equal share of voting power.

GENERATION OWNERS
Owners of power plants, wind farms, solar arrays and other sources

TRANSMISSION OWNERS
Companies that own transmission lines in a particular location, as well as large companies that own both generation and transmission systems

OTHER SUPPLIERS
Businesses that provide support services to the energy industry

ELECTRIC DISTRIBUTORS
Local utilities and public power cooperatives

END-USE CUSTOMERS
Mostly large manufacturing facilities and some state consumer advocates

Members are further organized into standing committees and subcommittees based on their expertise in an area of PJM's operations.

In addition to its members, PJM invites a broad network of "stakeholders"—state utility regulators, advocacy groups and others—to inform its policies. For example, PJM's leadership team meets regularly with a group of state regulators and governors known as The Organization of PJM States, Inc. (OPSI).

How are decisions made?

Three governing documents drive the majority of decisions made at PJM: an **"Operating Agreement,"** which defines the roles and responsibilities of members and generators who bid into PJM's daily energy markets; a **"Reliability Assurance Agreement,"** which outlines the standards for the stable supply and demand of energy; and an **"Open Access Transmission Tariff,"** which directs how PJM manages the transmission system and plans for future energy needs through its capacity markets.

PJM's members and board propose ongoing updates to its governing documents. **Any changes to these rules must be endorsed by a majority of members,** or in the case of the Reliability Assurance Agreement, by the board. Ultimately, **the Federal Energy Regulatory Commission (FERC) must grant final approval for any rule change to take effect.**

Additionally, two organizations weigh in on PJM's operations: The North American Reliability Corporation (NERC) sets mandatory standards for entities like PJM to ensure the reliability of the nation's power grid. Reliability First sets reliability standards that are specific to the PJM region.

How does a change at PJM get started?

Most changes at PJM start as ideas raised in member subcommittees, or shared directly with PJM staff. This is a key area where outside stakeholders can influence how PJM operates. For example, state regulators who participate in OPSI can ask PJM to explore changes to market rules that would enable better competition, or make it known that a rule would stifle state energy policies. The formal process of change begins when a member or PJM leader turns an idea into a **"problem statement"** and introduces it to other members for consideration.

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What happens next with proposals that gain traction?

PJM assigns a new problem statement to one of its subcommittees and stakeholder task-forces for analysis. This group will present its recommendations to PJM's standing committees which then review the proposal for its impact on energy reliability and overall operations. Once fully vetted, proposals go to the Markets and Reliability Committee—PJM's senior standing member committee—for a vote.

Who has the final say?

The Markets and Reliability Committee is the final stop for most proposed rule changes. A two-thirds majority of PJM members on this committee can vote to approve, reject or amend proposals. They can also choose to send proposals back to the subcommittees for further debate.

While PJM's overall membership must vote to approve changes before submitting them to federal regulators, they nearly always follow the MRC's recommendations. Generally speaking, issues related to governance and membership eligibility may be resolved by the broader membership; market changes and other technical issues are decided by the MRC.

What is the role of federal energy regulators?

Once a proposal has been approved by PJM's members, it is submitted to the Federal Energy Regulatory Commission (FERC) as a change to PJM's governing documents—what in legal terms is called a "Section 205" filing. Stakeholders and the public, including state energy officials, can then submit comments in support or protest of PJM's filing.

FERC will review and decide whether the proposed rule is "just and reasonable" for PJM's members and consumers. Regardless of what FERC decides, any stakeholder or member who has voiced their opinion on the record during this process can request

Who are key individuals at PJM to engage?

States can exert significant influence by building relationships with the following PJM leaders:

Asim Haque
Executive Director of Strategic Policy and External Affairs

Andrew Ott
President and CEO

Stuart Bressler
Senior Vice President of Markets and Operations

Vincent Duane
General Counsel

Steven Herling
Vice President of Planning

Michael Bryson
Vice President of Operations

Gregory Carmean
The Organization for PJM States, Inc. (OPSI)

a rehearing. If the parties involved are unsatisfied with the results of the rehearing process, they can challenge FERC's ruling in the federal court of appeals.

Federal law gives stakeholders yet another avenue to call for change: anyone dissatisfied with PJM's rules or operations can file a direct complaint with FERC, otherwise known as a "Section 206" complaint. A Section 206 asks FERC to both determine that an existing PJM rule is unjust and unreasonable, and to craft its replacement. PJM's own Board of Managers has the right to file a Section 206 complaint, and may do so in cases where they feel members and stakeholders have not addressed a critical issue.

Through OPSI and other opportunities, states can meet with PJM staff and executives to learn about issues, and express concerns about how PJM rules affect state policies and consumer costs.

How can states influence PJM?

PJM's decision-making process has long been dominated by a small number of generation and transmission owners whose interests are sometimes incompatible with state energy priorities and consumer protections. State officials and advocates can begin to shift this balance by influencing PJM in the following ways:

- States should make their voices heard during the "idea sharing" phase of PJM's decision-making process. Through OPSI and other opportunities, states can meet with PJM staff and executives to learn about issues, and express concerns about how PJM rules affect state policies and consumer costs.
- States should actively participate when an idea is being analyzed. Through task forces and user groups, states can join discussions, propose ideas, and ask questions.
- States should continue to express their views on the record by filing comments or protests in response to PJM proposals. They can challenge FERC orders that approve PJM member proposals.
- States can file Section 206 complaints to FERC to argue that a particular PJM rule is detrimental to state policies and consumers.